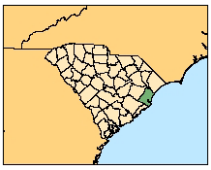
GEORGETOWN COUNTY, SC



Hazard Profile for 2008

An Excerpt from the State of South Carolina Hazard Assessment for 2008

I. Summary

Georgetown County is vulnerable to both natural (hurricanes/tropical storm) and technological (hazardous material incidents). Hurricane/tropical storms produce the highest monetary damages; however, the recurrence interval is 9.3 years, making it a relatively infrequent event. Winter weather, another infrequent event also is quite costly, as our drought and heat events. Coastal storms, hazardous material incidents, thunderstorms, and wildfires are some of the prominent hazards that regularly affect the county based on past occurrences, but result in few reported losses.

II. Social Vulnerability

Social vulnerability examines the socioeconomic and demographic character of places and helps to explain the variation in the population's ability to prepare for and respond to hazards. The Social Vulnerability Index (SoVI) is a statistical measure that compares social vulnerability to environmental hazards among places, and then visually displays these comparisons on a map. SoVI thus illustrates where there is uneven capacity for preparedness and response and where additional planning and response resources might be used most effectively to help residents. The variables used in determining the Social Vulnerability (SoVI) score along with how SoVI is calculated are available on the Hazards and Vulnerability Research Institute SoVI website (http://www.sovius.org).

Within Georgetown County, most of the census tracts exhibit moderate to moderately elevated levels of social vulnerability, based on statewide comparisons. Limited SoVI scores are along the coast in the northern portion of the county. Figure 1 provides maps of the Georgetown County depicting (on the left) social vulnerability by census tract and (on the right) cities and major roads.

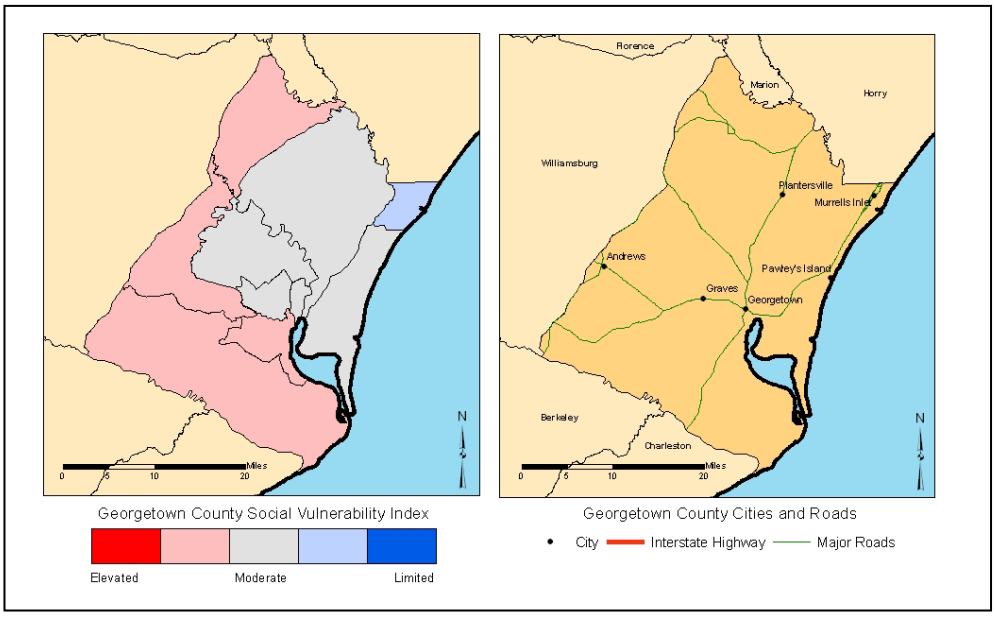


FIGURE 1. The Social Vulnerability for Georgetown County, SC by US Census tracts and a general reference map of Georgetown County.

III. Terms

Disaster – a singular hazard event that results in widespread human losses or has profound impacts on local environments.

Frequency – a calculated number showing the chance of an event occurring each year based on the historic record.

Hazard – the potential threat to humans as well as the impact of an event on society and the environment.

Recurrence – a calculated number that examines the expected time interval between events based on the historic record.

Risk – the likelihood or probability of occurrence of a hazard or adverse event.

Vulnerability – the potential for loss or the capacity to suffer harm from a hazard event.

South Carolina Emergency Management Division -
Mitigation Division
E-mail: mberry@emd.sc.gov
http://www.scemd.org

Hazard & Vulnerability Research Institute
University of South Carolina
E-mail: scutter.sc.edu
http://webra.cas.sc.edu/hvri

IV. Hazard Identification

The estimated recurrence of a hazard is a useful element (based on event frequency) for distinguishing between infrequent hazards like earthquakes, and frequent hazards such as hazardous materials incidents or traffic accidents. The most common hazard events in Georgetown County are hazardous material accidents, and severe thunderstorms. Floods, tornadoes, and hurricanes occur on average every 3, 4, and 9 years respectively. Earthquakes and winter weather have the lowest recurrence interval include. The recurrence and hazard frequency table can be seen in Table 1.

TABLE 1. The Hazard Profile for Georgetown County, SC.

Hazard[a]	Number of Events	Years in Record	Recurrence Interval (Years)	Hazard Frequency (Percent Chance per Year)
Coastal Events				
Hurricane/Tropical Storm	17	158	9.29	10.76
Ocean & Lake Surf[b]	7	16	2.29	43.75
Waterspout	6	16	2.67	37.50
Dam Failure	-	-	-	-
Drought	7	59	8.43	11.86
Flood	17	59	3.47	28.81
Fog	0	12	*	*
Geophysical Events				
Avalanche	0	49	*	*
Earthquake	2	310	155.00	0.65
Landslide	0	49	*	*
Human-Induced Events				
Civil Disturbance	-	-	-	-
Hazardous Materials (Hazmat)	341	22	<0.50	1,550.00**
Nuclear Power Plant	0	8	*	*
Terrorism	0	29	*	*
Transportation (Motor Vehicle)	11,111	10	<0.50	111,110.00**
Severe Thunderstorm Events				
Funnel Cloud	2	16	8.00	12.50
Hail	49	59	1.20	83.05
Heavy Precipitation	19	15	0.79	126.67**
Lightning	17	16	0.94	106.25**
Thunderstorm & Wind	88	59	0.67	149.15**
Tornado	13	59	4.54	22.03
Temperature Extremes	1	16	16.00	6.25
Wildfire	2,420	21	<0.50	11,523.81**
Winter Weather (Snow & Ice)	3	59	19.67	5.08

[a] Data Sources: National Climatic Data Center (www.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storm); National Geophysical Data Center (www.ngdc.noaa.gov/hazard/

[b] Includes coastal flooding, coastal erosion, coastal winds

* Unable to calculate (cannot divide by zero)

** Percent is greater than 100.00, therefore hazard can be expected to occur more than once per year

\- Data Unavailable

V. Hazard Loss Information

When compared to South Carolina as a whole, Georgetown County has a higher probability of coastal hazards, flooding, hurricanes, tornadoes, lightning, and drought. Figure 2 (page 3) shows those loss causing hazards occurring in the county that exceeded the state mean in red font. Winter weather, wind, and thunderstorms are well below the state mean indicating that these hazards historically have had less impact on Georgetown County than elsewhere in South Carolina.

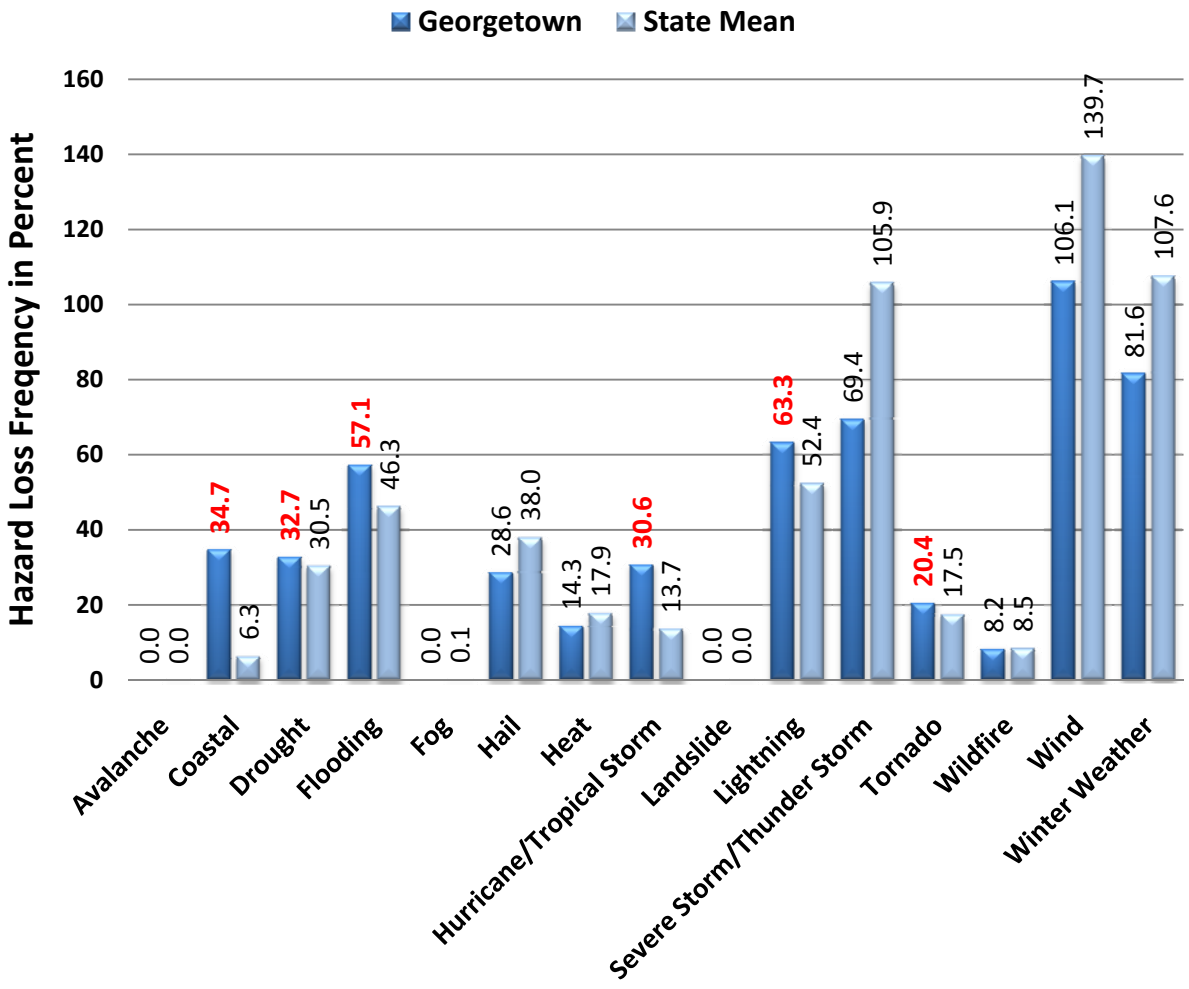


FIGURE 2. The historic loss causing hazard frequency between 1960 and 2008 for Georgetown County compared to South Carolina as reported in SHELDUS. Percentage numbers indicated in red are when the county total exceeds the state mean. Also, a hazard that is identified in the National Climatic Data Center Storm Data reports as a multiple event hazard (flooding, winter weather, coastal storm), and given a statewide or regional location, the impact of the event is equally distributed amongst the counties involved.

Another way of determining how vulnerable a county is to particular hazards is by examining the amount of damage caused by past events. In Figure 3 (page 4), the cumulative amount of damage from 1960 to 2008 based on twelve hazard types is computed from the Hazards and Vulnerability Research Institute's SHELDUS database (available at http://www.sheldus.org). The historic losses in Georgetown County exceed $1billion, and were largely due to hurricanes and tropical storms, followed by coastal, winter weather, and drought, Hurricane/tropical storm represented 87% of the damage in Georgetown County. While significant for the county, these cumulative losses represent 12% of the state's total overall, but 18% of the state's total damages related to hurricane/tropical storms.

Hazard	Total Damage (in 2008 dollars)	Percent of State
Coastal	$88,380,683	8.57%
Drought	$14,201,478	2.28%
Flooding	$3,088,883	2.07%
Hail	$314,391	0.32%
Heat	$11,286,643	2.26%
Hurricane/ Tropical Storm	$958,776,895	18.10%
Lightning	$980,833	1.94%
Severe Storm/ Thunder Storm	$2,895,861	1.43%
Tornado	$2,676,242	1.17%
Wildfire	$334,042	2.18%
Wind	$3,256,095	2.32%
Winter Weather	$16,769,438	1.94%
Georgetown - Total	**$1,102,961,484**	**11.99%**

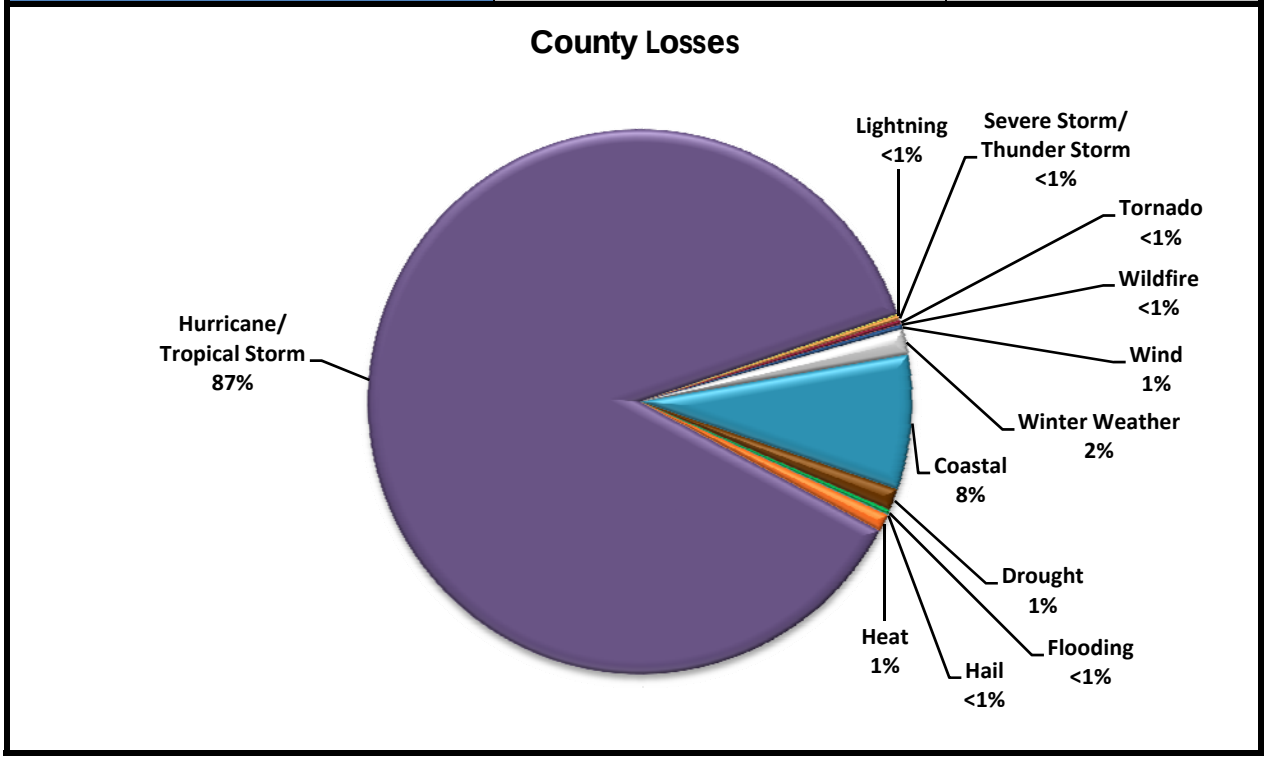


FIGURE 3. Historic Hazard Event Damages (property and crop) between 1960 and 2008 for Georgetown County, SC.